CALIFORNIA GOLD SYMPOSIUM II

Sacramento, California

Sponsored by

Geology Department, California State University, Sacramento
and
California Division of Mines and Geology

October 16, 1989

BUREAU OF LAND MANAGEMENT

MINERAL RESOURCE CLASSIFICATION AND ASSESSMENT

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The Bureau of Land Management is responsible for management of mineral resources on 270 million acres of public land and another 67 million acres of reserved mineral interest. Most mineral exploration and development companies, however, have contact with the Bureau only through its regulatory responsibilities for surface and environomental protection. The Bureau has a significant role in managing disposition and classification of mineral resources and reserves on public lands. This management function of the Federal government is rooted in Congressional recognition of the importance of mineral resources to the economic and strategic well-being of the United States as reflected in two National mineral policy acts.

A mineral resource reservation of mines and minerals from public land disposals was recognized in the public land laws as early as 1807. In 1847, Congress directed the Secretary of the Interior to conduct geological surveys of certain lands to identify valuable ores for future sale by the Treasury Department. In 1849, the U.S. Geological Survey was created as an agency in the Deparment of the Interior, to carry out the functions of public land mineral classification. In all future land disposal actions, no land could be sold, homesteaded, or selected by grant that was classified as mineral lands by the Secretary.

Today, the responsibility for public land classification is delegated to the Bureau of Land Management. Responsibilities for classification and assessments of mineral resources and reserves have been added, including the recognition of the importance of mineral resources in Bureau actions and land use planning under the Federal Land Policy and Management Act of 1976.

Generally, classification and assessments fall within four categories:

1. Classification and assessments of public land for purposes of land sale, exchange, grant, or lease;

2. Assessments of mineral commodities for sale, permit, or lease;

3. Verification of mineral value or character under the general mining laws; and

4. Inventory and assessment of public land mineral resources for land use planning.

THE CASTLE MOUNTAIN GOLD DEPOSIT

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The Castle Mountain gold deposit, which will be the third largest gold mine in California, is located 60 miles south of Las Vegas and 15 miles southwest of Searchlight, Nevada, in the old Hart Mining District. Mineralization occurs at an elevation of 4,500 feet in terrain typical of the Eastern Mohave Desert.

Viceroy Gold Corporation owns 100% of more than 2,000 claims (65 square miles) and has announced combined reserves of 40 million tons in 6 deposits with a total of 2 million ounces of gold in the ground.

Mineral Reserves		
Deposit	Tons ore	oz/Au/ ton
Jumbo South	8,832,000	.051
Lesley Ann	10,328,000	.065
Oro Belle	6,780,000	.055
Total	25,940,000	.055

Geologic Reserves		
Deposit	Tons ore	oz/Au/ ton
South Extension	7,108,900	.034
Jumbo	2,986,600	.066
Hart	3,376,000	.055
Total	13,471,500	.046

An 8,000 ton per day heap leach operation is planned to begin production in mid-1990.

The gold deposits occur within a complex rhyolite dome field intruded by rhyolite plugs and cut by hydrothermal breccias. Silicification and argillic alteration are common and two commercial clay pits occur near the gold deposits. Mineralization can be classified as volcanic-hosted epithermal. Preliminary results suggest that mineralization occurred about 15 M.y. ago in mid-Miocene time.

GEOLOGY OF THE ROYAL-MOUNTAIN KING MINE

CALAVERAS COUNTY, CALIFORNIA

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The Royal-Mountain King Mine is located 4.5 miles northwest of Copperopolis, California. Project reserves consist of 9.1 million tons at .068 opt. gold. The mine is a shovel-truck operation and the mill consists of conventional gravity, flotation, and CIL circuits with a rated capacity of 2750 tpd. The mine and mill began operation in February, 1989.

District geology consists of northwest-trending sequences of Jurassic metasedimentary and metavolcanic rocks. Gold mineralization is concentrated in three ore bodies located along the Hodson Fault, the dominant structural feature in the district, which trends northwest and dips 40 degrees to the northeast. The North and Gold Knoll ore bodies are hosted in carbonate and silica altered metavolcanic rocks and the Skyrocket ore body is hosted in quartz stockwork zones in metasedimentary rocks. Gold is present as inclusions and microveinlets in pyrite.

MONEY - HOW TO FINANCE YOUR MINING COMPANY

ON THE VANCOUVER STOCK EXCHANGE

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The Vancouver Stock Exchange, located in Vancouver, British Columbia, specializes in listing junior natural resource companies. The listing requirements are designed for junior natural resource companies and are less onerous than for non-resource or industrial companies. Also, the listing requirements of the VSE are not as stringent as other North American Exchanges.

Effective December 9, 1988, the VSE revised its listing requirements to upgrade the quality of new listings. However, the minimum original listing requirements with respect to net "seed capital" proceeds, prior expenditures on property, minimum prospectus offering, net proceeds, minimum funds allotted for exploration in the prospectus, and unallocated working capital on full listing still favour natural resource companies.

Taking a company public is one method of financing a mining company. Often, raising funds by way of a public offering is the only method of financing a mining venture in its initial stages. In the private stage of a company, that is, before it goes public, the principals of the company may purchase seed capital, receive principal and/or property shares, and incentive stock options which will assist them in maintaining control of the company. Before going public, the company must raise funds from other seed shareholders and expend a minimum of funds on the property.

When the company is ready to be listed, a prospectus - a disclosure document - must be filed and approved by the VSE and the British Columbia Securities Commission, the provincial regulatory body. Other documents which must be filed and approved include an Engineering Report on the company's property, an Agency Agreement with a brokerage house, copies of material contracts and audited Financial Statements. The company must also have an auditor, registrar and transfer agent, and a brokerage house willing to offer the company's securities.

Once a company has been listed on the VSE, it can raise additional funds by way of private placements, further additional public offerings, or rights offerings.

THE GOLD RUSH OF THE 1980s:

CYANIDE, HEAP LEACHING, AND THE ENVIRONMENTAL ISSUES

T.S. Ary

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Not since the turn of the century has the interest and activity in gold been at such a peak. Cyanide solutions are and will likely continue to be the predominant chemical used to extract gold and other precious metals from their host ores. While the use of cyanide chemicals for the recovery of gold is ubiquitous in today's gold rush, several questions exist about the use of cyanide and its long- and short-term fate and effects in the environment. These quesitons include such topics as the persistence of cyanide, the mass balance of cyanide in the leaching process, the mobility of metals in the heap, and protection of wildlife. The U.S. Bureau of Mines is conducting research into these and other questions pertaining to gold mining operations.

The long-term effects of the U.S. Bureau of Mines environmental research with respect to gold operations will be a healthy industry providing employment and necessary minerals production, a safer environment for the communities located near mining and processing operations, sound scientific data upon which State and Federal regulators can base their decisions, and adequate protection of human health and the environment.

GEOLOGY AND MINERALIZATION OF THE CARSON HILL GOLD MINE

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The Carson Hill gold mine is located in southwestern Calaveras County, two miles south of Angels Camp, California. Au mineralization is within and adjacent to the Melones Fault Zone. Local lithologic units from east to west are: a meta-augite-hornblende andesite (hangingwall of main ore zone and minor host), interbedded carbonaceous schists and volcaniclastics which grade into interbedded clay-rich and/or siliceous metasediments (major ore host) and a serpentinized peridotite, which defines the footwall of the presently mined ore zone. All units strike northwest and dip 60 to 70 degrees northeast. All units are metamorphosed to lower greenschist facies with strong shearing generally obscuring identification of the protolith.

The entire ore zone can be considered a phylonite which formed during oblique sinistral shearing. Au mineralization commenced during initiation of ductile sinistral shearing and continued as the local structural setting evolved to reverse faulting and finally thrust faulting. Au mineralization is confined to narrow zones of strong shear stress, with chlorite altered to sericite, and dilation zones characterized by quartz veining and extensive ankerite metasomatism. The main dilation zone is defined by the presence of massive "Bull" quartz up to 50 feet thick, which has been episodically brecciated and resealed during continued shearing. Pervasive carbonate and sericite alteration is always present, forming halos around quartz veins and mineralized shears. Sulphides are always associated with Au mineralization, with pyrite predominating. Other sulphides include: galena, chalcopyrite, tennantite, bornite, and molybdenite with tellurides present at higher Au grades. Au occurs at pyrite, ankerite, sericite, and quartz grain boundaries in varying combinations. Au also occurs as inclusions within pyrite, in tellurides and in telluride inclusions in pyrite. Pressure solution in quartz veining is indicated by a stylolitic texture with slickensided molybdenite and emerald green chlorite (mariposite) typically retained as a residue. Pressure solution appears to have played a major role during late stage remobilization and redeposition of coarse Au, tellurides, and other sulphides in fractures within late stage, rebrecciated, boudinaged quartz veins. All ore and associated alteration is offset by brittle movement along previously mineralized thrust faults.

GEOLOGY AND HISTORY OF THE 16 TO 1 MINE

ALLEGHANY, CALIFORNIA

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The 16 to 1 Mine is located in the Alleghany mining district, approximately 18 miles northeast of Grass Valley. The Alleghany district lies mainly within the Melones fault zone near the middle fork of the Yuba River.

The Alleghany district is underlain by a north- to northwest-trending complex of diverse metamorphic rocks of the Carboniferous Calaveras Group. These rocks are intruded by numerous slivers and larger masses of serpentinized ultramafic rocks. A large number of north- to northwest-trending veins occur along steeply dipping faults with displacements of up to 600 feet. Mineralized quartz veins range from a fraction of an inch to more than forty feet in thickness.

Gold mineralization occurs entirely within the vein. Extremely rich pockets of high-grade ore, on the order of 100,000 times richer than the surrounding vein, are scattered throughout the veins. A total of 73 percent of all gold mined has been hand sorted and brought out in sacks for processing. High-grade ore reaches concentrations of 3 ounces per pound and is sometimes sold as specimens or jewelry rock. The ability to locate high-grade pockets has been improved through the use of geostatistical sample evaluation.

The current 16 to 1 Mine is an accumulation of several old mines with a combined production history of over one million ounces. The mine began in 1853 and was in continuous production until 1965.

Dewatering and rehabilitation of the old workings began in 1983 to assess the potential of the remaining vein system. Limited production during this phase of rehabilitation has yielded over 11,000 ounces. The mine is a small operation employing 50 people. Conventional, jackleg drilling and narrow gauge electric haulage are used in a random stope and pillar mining operation. Exploration is conducted by raising, drifting, and core drilling.

CALIFORNIA GOLD MINES

NEW DEVELOPMENTS AND FUTURE PERSPECTIVE

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California gold production has grown dramatically since 1970. This has been the result of successful exploration and development primarily conducted in historic mining districts. Continued growth will depend upon development of underground reserves, definition of new deposits in previously unexplored areas, continued technical advancement and a reasonable regulatory and permitting environment.

The potential for growth in California gold mining is examined. Existing production is reviewed and potential exploration areas are discussed. Techniques for exploration are examined based upon past successful programs. Technical factors associated with future mining and production are reviewed within the context of California mineral deposit ore types.

Future development of gold production in California is constrained by many factors. These are discussed including new environmental regulations, the California Desert Bill, population growth, and the loss of a mining constituency in the general electorate. Answers to overcoming these difficult issues are elusive but have become essential if California is to realize the large remaining potential as a major gold producer.

PLACER GOLD DEPOSITS OF THE EARLY TERTIARY ANCESTRAL YUBA FLUVIAL SYSTEM, NORTHERN SIERRA NEVADA, CALIFORNIA

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The placer gold deposits of the ancestral Yuba River system were heavily exploited by hydraulic and drift mining methods during the latter half of the nineteenth century. These deposits still remain economically important; one billion cubic yards of reserves remain untapped. The deposits range in depth from 400 to 600 feet and laterally over several miles in width.

The ancestral Yuba gravels represent a braided river system deposit which changes in composition from an unsorted to poorly sorted cobble-boulder conglomerate at its base to a sand-dominated system at the top of the section. Clast studies indicate the existence of several compositionally distinct stratigraphic units representing deposits of different geologic ages and source terrains.

Sedimentologic data is useful in aiding reconstruction of depositional environments within the fluvial system, which in turn can be correlated with placer gold content in discrete stratigraphic units.

Short-term economic benefits of an integrated geological approach to the evaluation and exploitation of the fluvial deposits are increased gold productivity per unit volume mined, while long-term benefits include creation of a depositional model that can be applied to mine development of other preserved channel segments of the auriferous Ancestral Yuba fluvial system in northern California.

California Gold Symposium II

Program

October 16, Monday
Registration 7:30-8:30 a.m.

Morning:

8:30 - 8:35 a.m. Welcoming Remarks:
Joe Ziony, Assistant Director for Mining and Geology, California State Department of Conservation.

8:35 - 8:40 a.m. Greg Wheeler, Chair Geology Department, California State University, Sacramento

8:40 - 9:25 a.m. Bureau of Land Management Mineral Resource Classication and Assessment. Robert Waiwood, Mining Law Geologist, Bureau of Land Management, Riverside, CA.

9:25 - 10:10 a.m. The Castle Mountains Gold Deposit Hart District, San Bernardino Co., CA. Harold Linder, Consulting Geologist, Tempe, AZ

10:10 - 10:30 BREAK

10:30 - 11:15 Geology of the Royal Mountain King Mine. Tim Kühl, Chief Geologist, Meridian Minerals, Copperopolis, CA.

11:15 - 12:00 Money - How to Finance Your Mining Company on the Vancouver Stock Exchange. Pamela Joe, Barrister and Solicitor, Tupper, Jonsson and Shroff, Vancouver, B.C.

Luncheon Speaker:

12:00 - 1:30 T.S. Ary, Director of the United States Bureau of Mines, Washington, D.C.

Afternoon:

1:30 - 2:00 The Geology of the Carson Hill Mine. Ken Collum, Chief Geologist, Western Mining Corp., Altaville, CA.

2:00 - 2:45 Geology of the 16:1 Mine. Bill Sabo, Geologist, Kanaka Ck., Joint Venture, N. San Juan, CA.

2:45 - 3:30 California Gold Mines - New Developments in Future Perspectives. Barry Hillman, Consulting Geologist, Condor Minerals, Sonora, CA.

3:30 - 3:50 BREAK

3:50 - 4:35 Process Development of Refactory Ores. Richard Kunter, Vice President, Artech Recovery Systems, Golden, CO.

4:35 - 5:20 Ancestral Yuba River Gold Bearing Gravels. David Lawler, Consulting Geologist, Berkeley, CA.

PROCESS DEVELOPMENT OF REFRACTORY ORES

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Effect of Mineralogy on the McLaughlin and other Homestake Metallurgical Process Developments:

Gold in Homestake's McLaughlin Mine is occluded in several fine grained sulfide species including pyrite, marcasite, pyrargyrite, and miargyrite. Active carbon in this orebody, asphaltic in character and originating from the sea bottom sediments, causes "preg robbing" from gold bearing cyanide solutions when present.

Metacinnabar and cinnabar are present in substantial quantities in the upper zone of the orebody but decrease significantly with depth. Stibnite is present at times in massive quantities but is generally not auriferous. Arsenopyrite is present in lesser amounts that the stibnite. The presence of both arsenic and antimony in the system has given rise to a complex but rarer mineral suite also present in the orebody. Chalcopyrite, sphalerite, galena, and millerite are all present in locally anomalous amounts.

Roasting of this ore or its concentrate would have been a traditional and technically feasible approach to metallurgical amenability to cyanide leaching. The fine grained nature of the sulfides caused some ferritic sintering which somewhat reduced the overall gold extraction. Additionally, roasting would have required a state of the art gas cleaning and SO2 adsorption plant in an environmentally sensitive area of California comprised of three air quality control districts.

The hydrometallurgical pressure oxidation process eventually developed and installed by Homestake had a number of process and environmental advantages. The gold extraction by cyanide was higher than by roasting. The arsenic and antimony are disposed of in the solid residues as ferric-arsenates and ferric-antimonates which are stable compounds. Mercury is primarily contained as a mercuro-jarosite which does not readily leach. Copper, zinc, nickel, cobalt, and iron are solubilized during the pressure oxidation and are removed by washing and are therefore not present as cyanicides during the subsequent cyanidation with a substantial decrease in cyanide consumption. All of the sulfides in the ore act as fuel during the oxidation and provide the heat energy necessary to keep the process at temperature. The process tails are in a very stable oxidized condition and are highly buffered from changes in the basic pH range.

An understanding of the mineralogy of the McLaughlin deposit and the effects of various metallurgical processes on this mineralogy was concurrently pursued during the metallurgical development which led to the pressure oxidation process installed.

A hydrometallurgical concentrate leach was developed for the North Amethyst project at Homestake's Bulldog Mountain operation in Creede, Colorado. Bulk sulfide concentrates produced from certain areas in the operation had very high cyanide consumptions. Chemical and mineralogical investigation indicated the chemical species was ferro-cyanide and that during the leach cyanide was reacting with metastable pyrite showing very evident etched grain boundaries. Subsequently, the problem was alleviated by cleaning the concentrate with cyanide and sodium silicate and thereby depressing the pyrite into the cleaner tails. The concentrate was then leached with the high levels of cyanide required because of the silver content. The cleaner tails containing the pyrite was leached with low levels of cyanide which gave good precious metal recovery but eliminated the attack on the pyrite with an overall much reduced cyanide consumption.

Development of a Low Pressure, Low Temperature Leach for ARCO Coal Company's Arsenical Flue Dust Project:

Artech Recovery Systems, Inc. has developed a low pressure, low temperature leach process called the "Cashman Process" to extract base and precious metals from a complex arsenical flue dust and fix the arsenic in an environmentally stable form. A pilot plant campaign has just been concluded at Hazen Research Inc. which processed several tons of flue dust over several weeks using this process. Bechtel Engineering has been contracted by Artech Recovery Systems, Inc. to do a capital and operating cost estimate and the engineering drawings for a commercial plant.

CALIFORNIA GOLD SYMPOSIUM II

ROSTER

CALIFORNIA GOLD SYMPOSIUM II

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California Gold Symposium II

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MONEY - HOW TO FINANCE YOUR MINING COMPANY

ON THE

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MONEY - HOW TO FINANCE YOUR MINING COMPANY

ON THE

VANCOUVER STOCK EXCHANGE

INTRODUCTION

This paper is intended to provide a summary of the overall process of raising funds by way of a public financing and taking a company public on the Vancouver Stock Exchange. In order to keep this paper to a manageable size, details which may be relevant to the reader's particular circumstances may be omitted or simplified. In addition, this paper does not address the issue of sales of securities in the United States or sales to United States residents or any other relevant U.S. laws.

1. THE VANCOUVER STOCK EXCHANGE - HISTORY

The Vancouver Stock Exchange ("VSE") is located in Vancouver, British Columbia and was incorporated in 1907 by an Act of the British Columbia government to provide western Canada's resource industries with a method of raising money from the public and to provide a market for the secondary trading of share issues. The VSE is a self-regulated organization with respect to trading, listing and membership qualification. In Canada, the regulation of securities is a matter of provincial jurisdiction only. Hence the B.C. government, through its Securities Commission regulates, and administers the B.C. Securities Act and Regulations. Certain aspects of the regulation of listed companies are delegated by the Securities Commission to the VSE with the objective of avoiding the burdens of complying with duplicated requirements. The senior official involved in the enforcement and regulation is known as the Superintendent of Brokers ("Superintendent").

In addition to trading shares (and related warrants and rights), the VSE trades gold, silver and Canadian currency options.

The VSE is considered to be "Canada's Mining Exchange". Although most of its trading is from British Columbia (35%),

significant trading originates from other areas (30% from the rest of Canada, 25% from the U.S.A. and 10% from Europe and the rest of the world).

At the end of 1988, there were more than 2,300 companies listed on the VSE, and of them 72% (almost 1500 companies) were natural resource related. "Natural resource" companies include companies engaged in mining, oil and gas, forestry and aquaculture. Of the natural resource companies, about 1,200 were involved in mining and mining related ventures. Over 1,000 companies' activities related to gold and silver exploration and development and the remainder were related to other metals and minerals. Approximately fifty companies are actively producing gold and silver.

The VSE is a unique exchange in that its policies and rules are designed to encourage junior resource companies. Accordingly, the minimum listing requirements for resource companies are less stringent than for non-resource companies. The requirements were revised effective December 9, 1988 to upgrade the quality of new listings by ensuring that companies are better funded before going public, that they have sufficient capital after their initial public offering and adequate shareholder distribution.

In addition, the VSE's listing requirements are less stringent than other major exchanges in that companies are not required to have an established commercial record or level of maturity. The result is that companies listing on the VSE are generally more risky and speculative, and have small share distributions. Abuses have occurred and the VSE's compliance and surveillance departments deal with these problems quite strictly.

In 1987, the VSE established a record of 4.8 billion shares traded, making it the third most active exchange in North America after New york and Toronto. The total value of the shares was $6.7 billion and total financings were $1.3 billion.

In 1988, 3.5 billion shares were traded with a total value of $3.3. billion, and with total financings of $1.0 billion.

The decrease has been explained as a response to the October 19, 1987 market crash and the declining price of gold and gold related activities. Despite the downturn, there were 317 new listings in 1988, a 3% increase over the new listings for 1987.

Many companies listed on the VSE are U.S. based and/or have U.S. properties and approximately 86 VSE companies are also quoted on NASDAQ.

Many other VSE listed companies not quoted on NASDAQ have secured--quite easily and inexpensively--exemptions pursuant to Rule 25g3-2(b) of the Securities and Exchange Act of 1934. Such companies are also accepted for inclusion in Moody's and Standard & Poors Manuals. These procedures essentially "Blue Sky" the companies in more than thirty states so that secondary trading of their shares in the U.S. can occur.

The VSE's members consist of 47 brokerage houses participating with 70 seats, of which 62% are national houses having operations based in Eastern Canada and the remainder having their head offices in Vancouver. Members which have American based parent companies include Merrill Lynch Canada, Prudential-Bache Securities, Paine Webber (B.C.). Dominick & Dominick and Dean Witter Reynolds (Canada).

2. ADVANTAGES OF GOING PUBLIC

A. Generally

1. Increased marketability and liquidity of company's shares because of newspaper quotations, media commentary and other public reporting.

2. Facilitation of further financing through additional securities issues and further financing through conventional banking sources because of improved debt to equity ratio.

3. Establishment of a market value for valuation when considering merger, amalgamation, acquisition, pledging etc.

4. Increased prestige and respectability.

5. Incentives to employees and directors through stock options and stock purchase plans, increasing loyalty and performance.

B. On the VSE

1. Raising funds by way of a public offering may be the only method of financing a mining venture in its initial stages because such companies do not have significant earnings, substantial asset bases and easily quantifiable expenditure requirements.

2. The cost of obtaining and maintaining a listing with the VSE is generally less compared to other exchanges.

3. Less stringent listing and maintenance requirements, particularly with respect to financial prerequisites compared to other major exchanges and NASDAQ.

4. Quotations are disseminated to Canada, U.S., Europe and the Far East (through consolidated Canadian Data Feed).

5. Accessability to U.S. markets through the VSE's ACCESS program which facilitates transborder trading (computerized reporting, confirmation and settlement).

6. Generally less relinquishing of control of the business compared to financing with private venture capital.

7. Familiarity generally with the mining industry and mining ventures.

3. DISADVANTAGES OF LISTING

1. The listing procedure necessarily includes expenses related to the broker's commission, preparation of an engineering report, legal and accounting fees, printing costs, filing fees with the VSE and the Securities

Commission, registrar and transfer agent fees.

2. A public company and its directors and officers must file numerous reports including annual and quarterly financial reports, insider trading reports, filing statements, and reports on material changes. Much of this information is available to the public for review, so the company's affairs become less confidential, although sensitive information can in appropriate instances be filed on a confidential basis. In addition, a public company must hold annual general meetings which require proxy solicitation, preparing and mailing information circular.

3. The increase in public ownership of the company's shares results in a dilution of ownership and voting control to the founders of the company, although effective control may not be relinquished due to proxy solicitation procedures.

4. THE PROCESS OF GOING PUBLIC

There are four stages in taking a company public - the private stage, the prospectus stage, the public offering and listing stage, and the reporting stage. Each will be dealt with individually.

A. The Private Stage

i) Incorporation

Usually, companies which go public on the VSE are companies incorporated in British Columbia. However, there are a significant number of companies which are incorporated in other provinces and states which are extra-provincially registered in British Columbia and have gone public and are listed on the VSE.

ii) Management

Every reporting company must appoint or elect the following persons and committees:

a) Directors - The B.C. Company Act requires that every public company incorporated in B.C. shall have at least three directors, the majority of whom shall be persons ordinarily resident in Canada, and one who must be ordinarily resident in British Columbia. The VSE requires that non-B.C. companies have at least three directors, but there are no residence requirements.

To qualify as a director, a person cannot be under 18 years of age, incapable of managing his own affairs by reason of mental infirmity, a corporation, an undischarged bankrupt, convicted anywhere of an offence involving fraud or in connection with the promotion, formation or management of a corporation within a certain period prior to his election or appointment, or whose registration in any capacity under the Securities Act has been cancelled, unless 5 years have elapsed since the cancellation.

b) Officers - Every reporting company must have a president, secretary, chief executive officer and chief financial officer. The president must be a director of the company, but the other officers do not.

c) Audit committee - The audit committee examines the financial statements of the company and submits a report to the directors. The audit committee is composed of at least 3 directors, of whom a majority cannot be officers or employees.

d) Promotor - The promoter is the person who acting alone or in concert with one or more other persons, directly or indirectly takes the initiative in founding, organizing or substantially reorganizing the business of the company.

iii) Share Transactions

During the private stage, the company cannot sell shares to the public, nor can the shares be publicly traded on the Exchange. However, three types of share transactions can occur at this stage.

Principals' Shares

First, "principals'" shares may be issued to the principals of the company (directors, senior officers and promoters). Principals' shares may only be issued by a company which is not a going concern and only when the principals require a measure of voting control over the company so that work on the development of the property may proceed in an orderly fashion and/or some incentive is required to ensure that the principals give diligent support to the affairs of the company in the prospect that there will be a resultant increase in the value of the principals' share.

The minimum price is $0.01 per share and the maximum number of principal shares that may be issued is 750,000. These shares are subject to escrow restrictions, meaning that they cannot be transferred, (except to other principals, and only with the approval of the VSE) until the company has progressed satisfactorily and the VSE approves their release. In all other respects, the principal shares are like any other share (voting, right to dividends etc.). Typically, every new company can issue the full 750,000 principals' shares, at $0.01 per share , before going public.

Seed Capital Shares

The company typically raises its initial capital through the sale of shares commonly referred to as "seed capital shares". Seed capital shares can only be issued to private investors who are close friends, relatives and business associates of insiders of the Company. The minimum price is $0.25 per share. A company must raise at least $150,000 through the sale of seed shares. If the seed capital shares have been issued at less than 50% of the price of the shares which are

to sold to the public the shareholders must enter into a pooling agreement, whereby their shares cannot be released for trading until the day the company's shares are listed on the VSE. At this time, 25% of the shares may be released, and an additional 25% will be released every three months thereafter. Of the funds raised through seed capital, at least $75,000 must be expended on the company's property or business to be funded by the proceeds of the public offering.

Property Shares (Earn-Out Shares)

Third, shares may be issued in consideration for property or assets which are acquired by the company. There are extensive rules for valuing the property.

The Superintendent's policies in this area are currently under review and may be subject to change with little advance notice to the securities industry. Current rules may be summarized as follows.

If a property has a determinate value based on an extensive earnings history, and the transaction is arm's length, shares may be issued free of escrow or pooling restrictions if they are issued at a price equal to or greater than the price offered to the public.

If the determinate value is based on a capitalization of earnings derived from projections, all or a portion of the shares will be issued subject to escrow restrictions and their release will be based on earnings and performance formulas.

Typically, resource properties in the early stages of exploration and development are considered to be of indeterminate value.

If the property transferred is of indeterminate value, and the transaction is at arm's length, the vendor may receive shares which are placed in escrow, subject to an earn-out formula based on cash flow generated by the property. No such shares may be issued before the approval of the

prospectus and no more than 25,000 free-trading shares may be issued prior to the company's shares being listed on the VSE. Successive issuances of shares (made in at least 3 blocks relating to the significance of the company's work program on the property) must be approved by the regulatory authorities to a maximum of 200,000 free trading shares until the property is considered to be commercially viable. Any shares not earned out after six years are cancelled.

If the property transferred is of indeterminate value, and is transferred on a non-arm's length basis, no shares may be issued to the vendor and all he is permitted to receive are his out-of-pocket costs incurred with respect to the property unless the property is considered to be of unusual merit. Where the property appears to have unusual merit, the Superintendent may permit the payment of additional consideration such as cash, royalties, or shares to be issued at the production stage depending on the extent of the vendor's effort, skill and risk in developing the property.

Director and Employee Stock Options

Incentive stock options may be granted to directors, officers and employees of the company. The minimum exercise price is the price of the public offering, and the maximum aggregate number of shares which may be optioned is 10% of the company's issued shares, including the number of shares which will be offered to the public. The options must expire within 5 years of the effective date of the prospectus--the public disclosure document pursuant to which the public offering is made.

iv) Other Requirements to Consider

Before the company continues to the prospectus stage, it should ensure that it meets the other criteria that will be considered by the regulatory authorities. These include:

- having directors that are experienced in the company's proposed undertaking
- sponsorship by a member brokerage firm

- compliance with the legislation under to which the company was incorporated
- appointing an acceptable registrar and transfer agent in Vancouver
- retaining an independent qualified engineer or geologist to write a report describing the property of the company on which the proceeds of the company's offering are to be expended
- obtaining current audited financial statements

B. The Prospectus Stage

The Securities Act requires that, every distribution of a security must be qualified by a Prospectus approved by the Securities Commission, unless an exemption from this requirement is available under the Securities Act or Regulations. A prospectus is a public disclosure document which must provide "full true and plain disclosure" of all material facts relating to the securities proposed to be distributed. The prospectus qualifies the sale of securities distributed in B.C. to B.C. residents only.

The prospectus must be signed by the directors, the chief executive officer, the chief financial officer, the promotor and the brokerage firm. An engineering or geological report and recent audited financial statements must accompany the prospectus. Before approval is granted, the VSE must also approve of the prospectus.

i) The Prospectus

Every prospectus must disclose the following details:

- Distribution - Type of security offered, price, commission, proceeds to the company.
- Plan of Distribution - Name and participation of brokers, type of offering, terms of agency agreement.
- Use of Proceeds - What the net funds raised will be used for (cost of offering, property payments, work program, working capital).
- Previous share sales otherwise than for cash.

- Share and loan capital structure.
- Name and incorporation details of the company.
- Description of the business and property of the company - present and proposed.
- Promoters.
- Other obligations or securities issued.
- Dividend record.
- Directors and officers and their remuneration.
- Share purchase options outstanding.
- Details of shares escrowed or pooled.
- Risk factors.
- Principal holders of securities - disclosure of persons holding more than 10% of the company's shares, directly or indirectly, or beneficially.
- Prior share sales.
- Interest of management and others in material transactions.
- Auditors, transfer agents and registrars.
- Material contracts or facts.

ii) The Engineering or Geological Report

The Report must be prepared by an independent and qualified engineer or geologist who is a member in good standing of an approved professional institution or association. The author of the engineering report must have personally examined the property. The report must include details of the history, work, geology, access and location of the property and should include maps. The report should recommend a drilling and exploration program of at least $75,000, the minimum amount of funds which must be allotted for exploration in the prospectus.

iii) Audited Financial Statements

Audited financial statements submitted with the Prospectus cannot be dated more than 120 days from the Prospectus date. As a general rule the financial statements should not be more than 75 days old when the preliminary prospectus is filed.

iv) Other Documents

The VSE and Superintendent will also want to examine copies of all material contracts and documents (agency agreement, stock option agreement, escrow and pooling agreements, property acquisition agreements, shareholders list, and title opinions).

v) Review by the VSE and Superintendent

The Prospectus and related documents are reviewed independently by the VSE and the Superintendent. Generally, the VSE will focus on whether the offering will be conducted in accordance with its rules and policies and whether the company meets the minimum listing requirements. The Superintendent's review will focus on the share issuance, consideration for the shares, the use of proceeds and the qualifications of the company's management. Both the VSE and the Superintendent will issue deficiency letters to the company which must be cured before a receipt will be issued by the Superintendent.

Typically the staffs of the VSE and the Superintendent will review the "merits" of the offering and of the company and its proposed business with a somewhat paternalistic attitude--to see if it appears appropriate to offer to the "public" in B.C. This is in contrast with the general requirement in the U.S. where basically only full disclosure is required.

vi) Conditional Listing

Normally, a company will make an application for conditional listing at the same time it files its preliminary prospectus with the Superintendent. Once all deficiencies are resolved the Superintendent will grant approval and the VSE will grant a conditional listing (usually these occur concurrently). The conditional listing will be lifted when the company satisfies the Exchange that it has met the distribution and financial requirements which should be fulfilled when the public offering is completed. The company's securities will then be listed, posted and called for trading on the Exchange.

vii) Other Minimum Requirements

In addition to the minimum listing requirements mentioned previously, the VSE imposes the following additional listing requirements which must be met before approval will be given by the VSE for listing.

1. Minimum prospectus offering net proceeds: $200,000.
2. Minimum prospectus offering net price per share: $0.30 share or $0.40 per unit (a unit usually consists of at least one share and a warrant to purchase additional shares at a specified price)
3. Unallocated working capital on full listing $50,000.
4. Minimum number of shares sold from prospectus: 500,000.
5. Minimum number of publicly held free-trading shares: 300,000.
6. Minimum number of public shareholders holding the minimum purchase lot size: 200. (The minimum purchase lot size varies depending on the price of the shares)

C. Public Offering and Listing Stage

i) The Procedure

The company's initial public offering or initial distribution must take place on a day, called the "Offering Day" that is within 180 calendar days of the conditional listing. The offering day is determined by the broker handling the offering and the company, with the VSE's consent. The VSE must be notified of the Offering Day no later than 11:00 a.m. on the trading day preceding the Offering Day to enable the VSE to prepare an Exchange Notice to its members of the initial distribution. 50 copies of the final prospectus must be delivered to the Exchange no later than 11:00 a.m. on the trading day preceding the Offering Day and at least 240 copies no later than 9:00 on the Offering Day. Within 5 business days of the Offering Day, the agent and the company must make a final filing with the VSE, and upon the VSE's final review, the company's securities will be listed, posted and called for trading on the VSE.

ii) Types of Offerings

a) Underwriting - Here, the broker buys all of the shares which are to be sold to the public at a discount and re-sells them to the public at the offering price. The company receives funds from the underwriting within 10 business days of the date the prospectus is approved and is not dependent on the broker selling the shares to the public. As this puts most of the risk on the broker, it is not commonly used.

b) Agency Offering - The broker sells the securities of the company to the public on behalf of the company and receives a commission. The broker may agree to sell the securities on a "best efforts" basis, or it may guarantee the sale of all or a portion of the offered shares.

If the broker guarantees the sale of all of the shares offered in the Prospectus, the broker may be granted a non-transferable broker's warrant in consideration of the guarantee. The broker's warrant provides the broker with an option to purchase up to 50 percent of the total number of shares offered pursuant to the Prospectus. The terms of the broker's warrant cannot be more favourable than in warrants which may be offered to the public as part of a unit offering and the exercise period is a maximum of 2 years. The minimum exercise price during the first year of the term of the option is the offering price of the shares, and during the second year of the term of the option is 15% greater than the offering price of the shares. The company receives funds from the public offering within 5 business days of the offering day.

c) Greenshoe Option - Where a broker guarantees an offering the company may agree to grant the broker an option to acquire additional shares for sale to the public if the offering is oversubscribed. The maximum amount of shares that may be acquired under the greenshoe option is 15% of the total number of public offering shares. The exercise price is the same as the public offering price, and the expiry of the option is 60 calendar days from the offering day.

iii) Types of Listings

a) Initial Distribution System. Where the company's first share offering to the public will be made through the facilities of the VSE, an application for conditional listing must be made. The company's shares will be conditionally listed on the same date as the approval for the company's prospectus is issued by the Superintendent. This is the most common type of listing procedure as it is the easiest and quickest method of obtaining a listing with the VSE.

b) Wrap-around Listing. Where the company applies for listing within 60 days of completing a public distribution of its shares other than through the facilities of the VSE, this procedure allows the company's prospectus to form the basic disclosure document in the company's application.

c) Standard Form Listing. This procedure must be used in situations where a company has not followed either of the above procedures. The company must complete an Application for Listing and submit required documentation.

D. The Reporting Stage (Public Stage)

A company which has obtained approval of a prospectus, or is listed on the VSE, is considered to be a "reporting issuer" and is subject to continuous disclosure obligations. The objective is to provide continuous disclosure to shareholders, the public, creditors, and the regulatory authorities.

i) Annual General Meetings

A reporting company must hold an annual general meeting every calendar year. Notice by way of newspaper publication must be given 56 days before the meeting. The meeting material, which includes a notice, information circular, proxy form, audited financial statements and annual shareholders report must be mailed to registered and unregistered shareholders at least 33 days before the meeting.

ii) Financial Statements

Reporting companies must mail audited year end financial statements to all shareholders not less than 10 days before the annual general meeting. The Securities Act requires that the audited financial statements must be mailed and filed within 140 days of the date the statements are made up to. Typically the financial statements are mailed with the annual meeting documentation. The audited financial statements must be made up to a date not more than 6 months before the date of the meeting. In addition, copies of the audited financial statements must be delivered to the VSE and the Securities Commission.

Reporting companies are required to prepare Quarterly Reports containing unaudited financial information relating to the company in a prescribed form. The Quarterly Reports must be filed with the VSE and Securities Commission within 60 days of the end of the quarter and must be mailed to all shareholders who have requested to be put on a supplemental mailing list.

iii) Material Changes

A material change is defined as "a change which an investor could reasonably be expected to take into account in making an investment decision regarding the securities of the listed company." In most cases a material change means a change that could reasonably be expected to have a significant effect on the market value of those securities. Approval for a transaction which is considered to be a material change may be obtained from the VSE prior to the material change by way of a filing statement or letter. All material changes must be reported by filing a press release with VSE and disseminating it in accordance with the rules of the VSE. A Material Change Report detailing the material change must be filed with the Securities Commission within 10 days of the material change.

If a company is a "development" company, and if a proposed material change involves an arm's length purchase or sale of assets, then the prior approval of the VSE is not required

where the cost or proceeds of that purchase or sale does not exceed $300,000 as long as no shares are being issued or acquired as part of the transaction. If, as part of the purchase or sale, the listed company is required to issue some of its shares or to purchase the shares of another, then the filing exemption only applies if no more than 100,000 shares are to be issued and so long as the cost or proceeds of the acquisition does not exceed $150,000. The exemption can only be used by a "development" company if its shares are trading. This general filing exemption applies only to the use of unallocated working capital.

iv) Insider Trading

Insiders are directors, senior officers or shareholders beneficially owning or controlling 10% of the company's voting shares. Insiders are required to report their shareholdings to the Securities Commission when they first acquire securities in the company and 10 days after every month end where they acquire or dispose of securities in the company. Insider Reports are available for public inspection.

Insiders are prohibited from trading in securities of the company where they have acquired knowledge of a material fact or change in the company's affairs that has not been disclosed to the public. Tipping is also illegal in British Columbia.

v) Press Releases

The VSE requires that companies issue Press Releases on a timely basis relative to all matters or occurrences which might have an effect on the trading market, even though they may not be significant enough to require the filing of a material change report. The VSE may intervene and insist on a Press Release where there has been significant changes in the trading prices or volumes of a company's shares, commenting on why such changes have apparently occurred. Press Releases are not approved in advance by the VSE or Superintendent.

5. SUBSEQUENT FINANCINGS

i) Agent's Warrants

A broker may exercise a warrant granted to it in connection with the company's offering.

ii) Director and Employee Incentive Stock Options

Directors and employees may exercise all or part of options granted to them by the Company.

iii) Statement of Material Facts

Where a company is already listed on the VSE, it may offer additional securities to the public to raise funds provided a Statement of Material Facts ("SMF") is filed and approved by the VSE and the Superintendent. The SMF is a disclosure document which is similar to a Prospectus.

iv) Private Placements

There are various exemptions from the Prospectus requirements which are contained in the Securities Act and Regulations which allow a company to issue shares without having to file a SMF or prospectus, because of the special characteristics of the investor or the relationship between the investor and the company. One common type of private placement is to investors who are considered to be sufficiently sophisticated or knowledgeable about the company's affairs.

Occasionally, no disclosure document is required to be filed provided that the appropriate exemption can be relied on. To use some exemptions a brief form of disclosure document, called an "offering memorandum" must be used--but does not have to be approved by the VSE or the Superintendent. The price of the shares is determined by discounting the closing price of the company's shares on the VSE the day the private placement agreement is entered into and announced, pursuant to a prescribed formula. Securities purchased through a private placement cannot be traded for one year and the

certificate issued for the shares is required to be "lettered" with a notation of the holding period.

v) Rights Offerings

A reporting company may offer its shareholders a right to purchase additional shares at a fixed price on or before a specific date. A disclosure document called a rights offering circular must be approved by the Superintendent and the VSE. The rights must be listed for trading on the VSE. The exercise price of the rights is determined by discounting the closing price on the day the circular is approved pursuant to a prescribed formula. If a minimum subscription is set by the company, the maximum term of the rights is 30 days from the record date, otherwise, the maximum term is 90 days. If funds are required for a particular purpose, a minimum subscription must be guaranteed and the guarantor may receive a bonus of a non-transferable share purchase warrant entitling it to acquire a maximum of 40% of the shares it has agreed to guarantee at the exercise price of the rights.

CONCLUSION

The procedures for going public and getting listed on the VSE are well defined and well known to the lawyers, accountants and other consultants who practice in this area. Although the rules may at first appear complicated, a company which satisfies the requirements, and which can get a broker to handle the public sale of its shares can expect to become listed within a reasonable time and at a reasonable cost.

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U.S. Bureau of Mines

INFORMATION

Office of Public Information (202) 634-1001

INDUSTRY-SPONSORED AUDIOVISUAL PROGRAM

1. The Bureau of Mines Audiovisual Program, a public service program of documentary-style films and videos produced in cooperation with private industry, has been in continous service to the minerals industries and the general public for more than 75 years. It originated in 1913 with release of a black-and-white, silent film entitled ***The Story of Coal***, sponsored by the National Coal Operator's Association, and quickly grew into a very successful national education/information source, due in large part to a philosophy of cooperation between industry and government that is unique if not rare, and that has made possible an important series of balanced, objective films and videos on essential mineral resources--in many cases, the definitive study in a particular subject area.

2. Through this program, the Bureau maintains the only central library of mineral resource films and videos in the Nation, and makes these available on a short-term, free-loan basis to about 15,000 individual schools, professional and civic organizations (like Rotary, Kiwanis, etc.), cable and satellite television networks (like PBS and the Discovery Channel) that broadcast documentary subjects, more than 1000 network-affiliated television stations, and classroom-oriented, educational satellite and cable television systems throughout the country.

3. Under a standard cooperative agreement, participating sponsors select a producer, pay production costs, and provide release materials in 16mm and/or videotape formats for nationwide distribution by the Bureau. Distribution is at no additional cost to the sponsor, except for replacement prints and/or videocassettes as they might be needed down the road.

4. A Bureau of Mines staff producer works very closely with the sponsor and the production company throughout the process, including help with the selection or evaluation of a production company if that's needed, script development, location filming, editing and post-production, to assure the highest quality possible and a generic theme or storyline that can be successfully distributed in a publicly funded program.

5. Partly because of the generic, documentary treatment of subject material, most films remain in circulation for 10 to 15 years--some as many as 20 years, as long as the technology portrayed does not become obsolete and the sponsor is willing to maintain a distribution inventory. This amounts to a great deal of exposure for a corporate sponsor over a long period of time at a savings (based on the cost of commercial distribution to the same audiences) often many times greater than the cost of production.

6. Participating sponsors are recognized and credited in opening and closing titles, in annual catalogs, and in individual flyers and press releases prepared by the Bureau with the release of each new production.

7. Studies have shown that generic, high-quality public service programming is a very effective institutional advertising technique, especially in educational and cable television markets.

8. Since this is a public service program, sponsors are able (upon advice of council) to realize a tax savings on the associated costs.

9. The Bureau provides each sponsor with cumulative showings reports each quarter for the life of the production, listing names of borrowers, number of showings and audience size in each release format.

10. The Bureau does not require exclusive distribution rights. Sponsors are free to distribute their film or video in any other way they wish to audiences that may be out of our reach, or to make a different version for corporate use. Many sponsors "piggy back" a corporate version for promotional or sales purposes at a nominal increase in costs.

11. Current sponsors include: Phelps Dodge Corporation, Union Carbide, Cast Iron Society, Silver Institute, Gold Institute, Natural Resources Division of the Union Pacific Railroad Company, Atlantic Richfield Corporation, Lead Industries Association, U.S. Borax and Chemical Corporation and the Platinum Guild International (USA), Inc.

12. Mandatory showings reports and audience counts provided by classroom and organization users, and audience estimates provided by television users, show that more than 30 million people have seen films and/or videos in the Bureau's sponsored Audiovisual Library in the last 5 years alone. Even so, based on the early response to a major broadcast and educational television initiative begun in mid-1988, Bureau audiences are expected to increase dramatically over the next few years.

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